REMARKS

I. Status of Claims

Prior to entry of this paper, **Claims 2-5, 8, 9, 17-26, 29, 33-41 and 45-50** were pending. Claims 2-5, 8, 9, 17-26, 29, 33-41 and 45-50 were rejected. In this paper, Claims 2, 22, 38, 49, and 50 are amended. Claims 2-5, 8, 9, 17-26, 29, 33-41 and 45-50 are currently pending. No new matter is added by way of this amendment. For at least the following reasons, it is respectfully submitted that each of the presently pending claims is in condition for allowance.

II. Claim Rejections - 35 U.S.C. § 103

Claims 2-5, 17, 18, 22-24, 29. 33, 34, 38-41, 45 and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim, U.S. Patent No. 6,360,256 (hereafter "Lim") in view of McCanne, U.S. Patent No. 6,785,704 (hereafter "McCanne").

With this paper, **Claims 2, 22, 38, 49, and 50** have been amended to further clarify the nature of the load balancing and the delegation of requests respectively recited therein. Such amendments further clarify the distinction, and thus patentability, between the claimed inventions respectively claimed therein and the applied prior art of Lim and McCanne. Support for these amendments can be found throughout the specification as originally filed, including Table 5 and lines 1-3 of page 23, lines 24-26 of page 27, lines 37-41 of page 30, lines 12-19 of page 37, and lines 36-46 of page 41.

With this paper, for example, **Claim 2** has been amended to at least recite the limitation:

determining whether to delegate delivery of the resources to a content delivery network based on the determination for optimally balancing the load across the plurality of servers, a Time to Live value set at a pool level for each of a plurality of available pools, and a pool load-balancing setting.

After carefully reviewing the teachings of the references of Lim and McCanne, it is respectfully submitted that these references, even in combination, do not teach or suggest at least this limitation for multiple different reasons. For example, neither of the references of Lim or McCanne teaches nor suggests the concept of "pools" for a zone, much less the load-balancing

between any such pools. In the cited teachings of McCanne, including lines 6-51 of column 13, the "redirector node routes the client to the most appropriate server based on load and network measurements". However, this redirector node is in the content distribution network (col. 15, lines 33-38 of McCanne), and thus its actions do not constitute "*determining whether to delegate delivery of the resources to a content delivery network based on the determination for optimally balancing the load*" as is further claimed in Claim 2. Redirecting within a content delivery network is not equivalent to determining whether or not to delegate to a content deliver network. In fact, the redirector of McCanne "intercepts the request" (col. 13, lines 38-41), which precludes the need for delegating the request, since the redirector of McCanne intervenes of its own accord. The content service providers in McCanne also modify content URLs to directly "'point into'" the content network (col. 11, lines -14 of McCanne), which also precludes the concept of determining "*whether*" to delegate a request, since the direction of the request's routing is already established. Additionally, the discussion of Time to Live tags is presented in McCanne with regards to DNS responses (col. 17, lines 29-31 of McCanne), which is neither equivalent to nor suggestive of TTL values for "*pools*" or a "*pool level*", including as it is further claimed in at least Claim 2, which includes use of the value to determine whether to delegate delivery of resources. On the whole, the use of any similar terminology in McCanne simply does not teach or suggest the claimed structure and relationships of the components as further claimed in at least Claim 2. Alternately stated, the limitations of Claim 2 recite interaction(s) among components and steps that are neither anticipated nor rendered obvious by the teachings of Lim, even in further view of McCanne. For at least these reasons, withdrawal of the previous rejection of Claim 2 is respectfully requested.

With this paper, **Claim 22** has been amended to at least recite the limitation:

determining whether to delegate delivery of the resources to a content delivery network based on the determination for optimally balancing the load, wherein the determination of whether to delegate delivery is made prior to a connection of the client to the content delivery network if the delivery of resources is delegated to a delegation pool associated with the content delivery network.

Similar to noted above with regards to Claim 2, it is respectfully submitted that Lim, even in view of McCanne does not anticipate nor render obvious such a limitation for a plurality of reasons.

The teachings of Lim, while mentioning the concept of load-balancing between servers or hosts (col. 7, line 64 – col. 8, line 5 of Lim), do not teach or suggest a relationship between load balancing and a content delivery network, including conditional such balancing as further claimed in Claim 22. The load-balancing cited in McCanne, such as in column 27, lines 1-13, is performed by a content delivery service redirector (CDSR), which resides within a content delivery network (CDN). In fact, the system of McCanne includes a mechanism by which even calls directed to an origin server are redirected to within the content deliver network (col. 21, lines 1-16 of McCanne). Similarly, the ideal system of McCanne includes modifying legacy devices to connect to a CDN-aware component (col. 23, lines 41-48), modifying client applications to directly interact with the CDN (col. 25, lines 32-36), or ultimately deploy the CDN technology on a universal scale (col. 19, lines 23-28). Clearly, such ubiquity does not teach or suggest "*whether*" to delegate the delivery to a content delivery network.

Even when a request for content is diverted to other servers outside a given CDN in McCanne, an underlying component of the CDN architecture or backbone is deployed to receive such a request (col. 15, lines 32-40 and col. 19, lines 4-23 of McCanne), which means that the responsibility of delivering the content is still initially delegates to the CDN of McCanne. Again, the system of McCanne "intercepts the requests" (col. 13, lines 38-41), which precludes the determination of whether or not to delegate a request, much less "*wherein the determination of whether to delegate delivery is made prior to a connection of the client to the content delivery network when the delivery of resources is delegated to a delegation pool associated with the content delivery network*". Capturing "all requests" outside a content delivery arrangement (col. 14, lines 38-43 of McCanne) does not teach or suggest the choice represented in the "*determining whether*" of the claimed invention, including as further represented in Claim 22. For at least these reasons, withdrawal of the previous rejection of Claim 2 is respectfully requested.

With this paper, **Claim 38** has been amended to at least recite the limitation:

determining a physical geographic location associated with the internet protocol (IP) address of the request;

It is respectfully submitted that neither Lim nor McCanne teach or suggest such a limitation, including the further use of such physical geographic location information as is further represented in amended Claim 38. In the previous Office Action, this limitation appears to have been rejected based on the grounds of rejection cited in regards to Claim 17 (section "g", page 5 of most recent Office Action). These grounds of rejection included column 9, line 61, through column 10, line 8, and column 10, lines 23-27, and column 21, lines 52-62 of McCanne. However, neither these passages, nor others, teach or suggest "*physical geographic location*" as is further claimed in amended Claim 38. The action "captures the user's request for content and servers the content locally", such as noted in column 7, lines 61-63 of McCanne, does not teach or suggest this limitation. In fact, the server action of "capturing" and the fact that servers may be "co-located" with edge point of presence (PoP) nodes precludes the need in McCanne to "*determine the a physical geographic location associated with the internet protocol (IP) address of the request*" as is further claimed in Claim 38. Regarding the other cited passages, clearly "hops", "edge-caching" "server load measurements", "network path measurements", "administrative locality", and "customer policies" are not equivalent to "*physical geographic location*" of a request's IP address as further claimed in Claim 38. Physical locations, such as a continent, are simply not considered with such requests, not are they indicated in the term "locally". Logical distance, such as hops, is not equivalent to physical geographic distance. While these factors may guide other manners in which client requests are routed to service node attachment points, they do not anticipate nor render obvious that which is further claimed in the amended limitations. For at least these reasons, withdrawal of the previous rejection of Claim 38 under 35 U.S.C. §103(a) is respectfully requested.

With this paper, **Claim 49** has been amended to at least recite:

a means for determining whether to delegate delivery of the resources to a content delivery network based on a load balancing determination for optimally balancing the load across the plurality of servers or the content delivery network, wherein the plurality of servers and the content delivery network are designated members of different delegation pools of content sources.

After reviewing the teachings of Lim and McCanne, it is also respectfully submitted that these references, even in combination, do not teach or suggest this limitation for multiple, different

reasons. Lim discloses tracking the conditions of servers, not pools, and certainly not members of different delegation pools of content sources (col. 6, lines 34-53 of Lim). Monitoring "each" host in a system in Lim (col. 5, lines 5-14), does not teach or suggest the relative treatment of such resources, including that which is further claimed for the "*delegation pools*" in amended Claim 49. An overarching network or "backbone" of devices (col. 15, lines 33-43 of McCanne) also fails to teach or suggest such a decision-based relationship among sources, including that which involves both a listing and a delegation decision. When the "content distribution network intercepts the request" in McCanne (col. 13, lines 38-41), this action supersedes the use or even need for "*determining whether to delegate*", including as it is further claimed in at least Claim 49. The common and overriding use of "anycast address(es)" at each device involved with the content delivery network in McCanne (col. 15, lines 33-43), also does not teach or suggest "*the plurality of servers and the content delivery network are designated members of different delegation pools of content sources*". In fact, load-balancing in the system of McCanne occurs only after the request has entered a content delivery network, such as through the operations of an APAR-DNS server, which McCanne explicitly notes to be part of the CDN (col. 16, lines 37-40 and col. 17, lines 8-16). When each server of a system is arranged to be included in the overall content delivery network, such as in the system of McCanne (col. 15, lines 33-43), then such an arrangement fails – and particularly precludes – the teaching or suggestion of deciding between "*a plurality of servers*" and a "*content delivery network*", including as is further presented in the amended limitations of Claim 49. Yet, it is respectfully submitted that McCanne does not teach or suggest an alternative form of handling or grouping content sources, including, again, as is further represented in amended Claim 49. Merely creating a "set of target addresses" (col. 17, lines 1-2 in McCanne) does not teach or suggest "*designated members of different delegation pools*". For at least these reasons, as well as those similar to other claimed listed herein, withdrawal of the previous grounds of rejection for Claim 49 is respectfully requested.

With this paper, **Claim 50** has been amended to at least recite:

determining whether to delegate, in a controlled manner, delivery of the resources to a content delivery network or to an origin site based on the balancing of the load and a mapping

created between pools of content sources and an identified physical geographic location of an IP address of the request.

It is also respectfully submitted that these references of Lim and McCanne, even in combination, do not teach or suggest this limitation for a plurality of reasons. For example, as noted above, Lim performs load-balancing among servers (col. 6, lines 34-53 of Lim), which does not include teaching or suggestion of content delivery networks, physical locations, or even mapping between pools of content resources. McCanne discloses a content delivery network that "intercepts" or "captures" requests (col. 13, lines 38-41), the disruptive or injected effect of which precludes "*determining whether to delegate, in a controlled manner*" as is further claimed in Claim 50. In fact, even when the request is not "'captured'" (col. 20, lines 50-67 of McCanne), it still has already been received by the "redirector fabric" of the content delivery network in McCanne, which again, simply does not teach or suggest the "*determining whether*" as is further claimed in at least Claim 50. In the context of McCanne, the terms "nearby" and "closest" refer to hops, such as one hop, which is a logical proximity that fails to teach or suggest "*identified physical geographic location*" (col. 9, lines 52-58 of McCanne). McCanne is also noted as involving servers that "map a finite set of host addresses" based on a "known names" or "an unbounded set of arbitrary names" (col. 16, lines 57-63 of McCanne), but this set of addresses does not constitute the claimed "pools", nor does an association between the set of addresses and "related attributes" convey a mapping between the "*pools of content sources and an identified physical geographic location of an IP address of the request*". Notably, the address of the "target" is not the address of the "*request*", particularly because even in the teachings of McCanne, requests are made in terms of "configured names" (col. 16, lines 57-58 of McCanne). For at least these particular reasons, as well as others of those that are related to the claims listed herein, withdrawal of the previous grounds of rejection for Claim 50 is respectfully requested.

Claims 8, 9, 19-21, 25, 26, 35-37 and 46-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim in view of McCanne and further in view of Jindal et al., U.S. Patent No. 6,092,178 (hereafter "Jindal").

However, so far as these claims depend from amended claims, Claims 2, 22, or 38, it is respectfully submitted that these claims incorporate, by virtue of dependency, at least one of the above discussed limitations of parent claims, Claims 2, 22, or 38. For at least similar reasons, these claims are also not taught or suggested by the combination of Lim and McCanne. Accordingly, withdrawal of these rejections is respectfully requested.

It is further respectfully submitted that the teachings of Jindal do not cure the deficiencies of Lim and McCanne noted herein. The notion of servers being "geographically dispersed" (col. 10, lines 45-47 of Jindal) does not teach or suggest identifying the physical geographic location or a requestor, nor any such use of this form of information in determining whether or not to delegate content delivery to a content delivery network. In the context of Jindal, "closest" is ultimately determined in terms of a logical distance or "hops" (col. 8, lines 40-43), and not a physical geophysical location as is further claimed and discussed herein. The "server farms" of Jindal (col. 10, lines 45-54) are not equivalent to, nor suggestive of, the "content delivery network" of McCanne (col. 13, lines 20-35), much less that which is further claimed herein, for example, such as in amended Claim 49, which differentiates a plurality of servers and a content delivery network into a different delegation pools. Servers that are segregated by geography and connected through a common intermediate server, such as shown in Figure 4 of Jindal, do not teach or suggest "*pools*" that are determined for the further purpose of delegating delivery of content, including that which is further claimed in the claims amended herein.

Accordingly, it is respectfully submitted that the pending claims, Claims 2-5, 8, 9, 17-26, 29, 33-41 and 45-50, are not taught or suggested by Lim, even in view of McCanne and Jindal. Withdrawal of each of the previous grounds of rejection under 35 U.S.C. §103(a), including those that involve Jindal, is respectfully requested.

CONCLUSION

It is respectfully submitted that each of the presently pending claims is in condition for allowance and notification to that effect is requested. Examiner is invited to contact the Applicants' representative at the below-listed telephone number if it is believed that the prosecution of this application may be assisted thereby. Although only certain arguments regarding patentability are set forth herein, there may be other arguments and reasons why the claimed invention is patentable. Applicant reserves the right to raise these arguments in the future.

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Respectfully submitted,

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